

Forest and Bird



No. 193

August 1974



Wildlife Service photo by P. Morrison

A banded dotterel standing over its nest near Lake Ellesmere. Its eggs are difficult to see, as their colouring merges deceptively with that of their surroundings.

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Our Heritage

WHEN man first discovered it, New Zealand was a land of peerless beauty and unique flora and fauna, a land with abundant pure water, fertile flats, and a temperate climate.

This land is our heritage, a land prosperous and providing for its peoples living standards not excelled in most parts of the world. But it is a land that has been sadly abused mainly through lack of vision of our forebears, who were too busy to give sufficient thought to the future. Great areas of bush were cleared or burnt needlessly, and many species of browsing animals were imported and turned loose in the bush or on the mountain slopes; in the absence of natural predators they have multiplied and caused widespread damage to vegetation that has resulted in severe erosion described by some overseas scientists as the most spectacular in the world.

Industrial progress and increasing population have occupied many of our most fertile lands and brought pollution to streams and harbours.

Notwithstanding the damage which has been done, there is much to be thankful for. During the past two decades there has been an astonishing upsurge of public opinion supporting conservation of natural resources. Two Government bodies have been appointed specifically to deal with conservation, and a number of private bodies have sprung up with conservation of nature as their object; we now have over 5 million acres of national parks and nearly 1,000 other reserves of various sorts.

For over 50 years the Royal Forest and Bird Protection Society has been in the lead in the fight to save bush and bird and other natural features of the country. At the recent annual meeting of the Society at Palmerston North a strong Executive was elected including several new members of outstanding ability. Much has been done, but much remains to be done. We must consolidate our gains and use the enthusiasms of present members to ensure that what is left unspoiled of our bush and birds and other natural features remains unspoiled for posterity. It can be done and with the continuing loyalty of all members, and the recruitment of many new members, it will be done. In this way all can help. This land, which is our heritage now, must be preserved as the heritage for our children in the future.

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Survey on D'Urville Island Emphasises Need for Protection of Archaeological Sites

THOUGH the need to conserve native flora and fauna has now become widely appreciated, there is yet little understanding of the necessity to protect archaeological sites and so preserve New Zealand's prehistory. In this article N. Prickett, a member of the Otago Branch and a graduate in archaeology, describes a survey made of 258 sites on D'Urville Island and warns of the danger of similar sites being destroyed throughout the country.

MOST New Zealanders have seen part of the Marlborough Sounds even if it has been only from the deck of a Wellington-Picton ferry. It is an area of valleys now drowned by the sea. Many bays and long arms of the sea give sheltered water under steep hillsides which rise to over 2,000 ft.

The Sounds have always been an attractive place for man. When Captain Cook first sheltered in Queen Charlotte Sound to refit his ship and rest his crew he was met by a number of Maoris living in the area who were quick to trade fish for goods made of iron.



This D'Urville Island site includes 22 well-preserved pits. On the right is typical coastal forest containing karaka, kohekohe, and manuka.



A prehistoric garden site above a west coast harbour beach on D'Urville Island. The photograph was taken late in the day and therefore the walls and (at least 13) pits stand out well.

Completely Altered

The Sounds have, however, been completely altered in appearance and in ecology since Cook's time. The hills have been stripped of bush, and most of the birds have gone; the area which was first cleared for sheep is now undergoing a second invasion, this time of holiday makers. The newly created Marlborough Sounds Maritime Park will perhaps prevent the worst features of unplanned subdivision and development, and bush and shore reserves are being set aside. But there is one field in which this new invasion may be immensely damaging—to the prehistoric archaeological record.

The future of archaeology in the Sounds district is not bright. Today's holiday makers are mobile, and city dwellers all seem to want a place by the sea. Seaside subdivisions are almost inevitably situated on Maori occupation sites. Bulldozers and other machinery can make a road or prepare a building site or fence line very rapidly, and there is seldom any attempt to protect archaeological sites which may be

in the way. Holiday makers themselves can destroy important sites in a search for curios. Very little may ever be known about the greater part of man's occupation of the Sounds, since there may be no sites left when New Zealand's few archaeologists are able to turn their attention to the area.

Last year I took part in a survey of archaeological sites in one small part of the Sounds—D'Urville Island. This survey was assisted by the New Zealand Historic Places Trust and by the Department of Lands and Survey.

Forming Ideas

We were interested in finding sites and describing them as best we could, and we were also interested in forming ideas about how the prehistoric inhabitants of the island lived, ideas we hope one day to test by archaeological excavation.

D'Urville Island is at the north-west end of the Marlborough Sounds and is separated

Birds Recorded

BIRDS recorded on D'Urville Island during the survey were:

Kiwi (species unknown)*	New Zealand pigeon
Little blue penguin	Kaka
Giant petrel	Parakeet (species unknown)*
Storm petrel	Shining cuckoo
Gannet	Long-tailed cuckoo
Black shag	Morepork
Pied shag	Kingfisher
White-throated shag	Rifleman
Spotted shag	Skylark
White-faced heron	Pipit
Blue reef heron	Hedge sparrow
Black swan	Brown creeper
Feral geese	Fantail
Paradise duck	Tomtit
Mallard/grey duck	Robin
Harrier hawk	Song thrush
Weka	Blackbird
Pukeko	Silvereye
Variable	Bellbird
oystercatcher (black phase)	Tui
Arctic skua	Yellowhammer
Black-backed gull	Chaffinch
Red-billed gull	Greenfinch
Caspian tern	Goldfinch
White-fronted tern	Redpoll
	Starling

*Reported only.

from the mainland by French Pass. The landscape is a little more abrupt and wild there than elsewhere in the Sounds; high steep hills rise straight from the sea and there is almost no flat land anywhere. The highest point is Attempt Hill, 2,382 ft.

The island is about 20 miles long and 10 miles wide, and it totals about 40,000 acres. On the west coast deep harbours cut back into the interior, forming at their entrances gaps in the high cliffs which otherwise present a formidable coast to the prevailing north-westerlies and westerlies. The sheltered east coast of the island faces into Admiralty Bay and though there are no large harbours, there are many bays and coves.

Nelson Mineral Belt

D'Urville Island lies at the north end of the Nelson mineral belt. This belt of serpentines and contact-altered argillites and other rocks can easily be seen on D'Urville and elsewhere, since the vegetation it supports is limited to hardy narrow-leaved shrubs (mostly manuka) which form a vivid contrast with the rich diversity of forest species elsewhere. D'Urville Island forests are dominated variously by hard beech, kohekohe, and kamahi; and, for the South Islander, rewarewa, karaka, and pukatea add an interesting northern element.

The absence of opossum is well reflected in the excellent condition of the forest canopy. On the forest floor, however, pigs are causing considerable damage—not least in archaeological sites, which seem to attract them because of the richness of their organic deposits.

The high centre of the island is still covered in forest as are the steep eastern slopes south of Mount Ears. In this forest there are numerous native bush birds. Kiwis are apparently present, though we did not hear them. Fairly common bush species include wekas, tomtits, rifleman, and bellbirds; less common are kakas, parakeets, robins, and tuis. In the open country there are harrier hawks and pipits and exotic species, of which redpolls, chaffinches, starlings, and yellowhammers seem to be the most numerous.

Habitat for Sea Birds

Excellent habitat for a variety of sea birds is provided by the open waters of Cook Strait and by the sheltered waters of the Sounds. Just off Ohana, at the south end of the island, we saw a dozen gannets diving through about 60 white-fronted terns, 100 storm petrels, and a few red-billed and black-backed gulls; and there was a single Arctic skua waiting for his turn just outside all the activity.

At the north end of D'Urville huge "islands" of feeding red-billed gulls swirl away with the current to the south and west. Within Port Hardy and Greville Harbour are little blue penguins, pied and spotted shags, and blue reef herons.

Archaeologists are very interested in the natural environment, since the object of their study is to find out how earlier men and women lived in their world. D'Urville Island was undoubtedly very different when the first Poly-

nesians arrived, say, 1,000 years ago. We know from bones in midden deposits that kakapo and some moa species were present. We can guess that except for the mineral belt country most of the island was under heavy bush.

At Cape Stephens, the northern tip of the island, a deep deposit of guano, once mined by settlers, shows the presence of a vanished gannet colony. The pakeha and his sheep have undoubtedly brought about huge changes. Nevertheless the first settlers on the island also modified the landscape and the ecology; and these modifications to the landscape in the form of pits, terraces, pa, beach occupation sites and middens, and garden areas we were initially interested in finding and describing.

Lived by Gardening

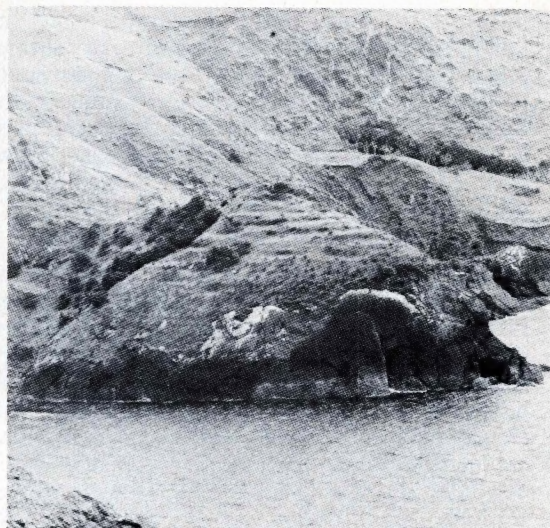
We recorded 258 archaeological sites and we covered less than half the island. Most of the sites were close to the sea, at the back of beaches and coves and up the steep spurs behind. The prehistoric inhabitants of the island seem to have lived by gardening and by fishing and collecting shellfish. Bird, dog, and seal bone was also found in small quantities in the middens.

We recorded only four garden sites. Much of the scarce flat land and many of the easier lower slopes on D'Urville have been modified for kumara agriculture by the addition of gravel and charcoal, but we recorded as "garden sites" only those few gardens which were marked out by stone walls. These walls were partly the result of land clearance and partly boundaries of fields or plots. Such stone walls have an interesting distribution in New Zealand, from Banks Peninsula to parts of North Auckland. Eighty-eight pit sites provided other evidence for kumara agriculture.

New Zealand has a marginal climate for tropical food plants. Kumara, for example, will not propagate itself naturally here, and the kumara tuber needs to be stored in conditions of correct humidity and temperature over winter and planted out in spring. Most of the pits we recorded on D'Urville Island are probably kumara storage pits.

Diet of Islanders

Archaeologists have not yet worked out a method for positively confirming the former presence of kumara in garden soils or in features such as pits. We are able to infer its



A small pa site (foreground) on D'Urville's east coast.

presence only from pits, modified soils, and wall systems. Kumara almost certainly played a very large part in the diet of the people who lived on D'Urville Island, at least for some part of the prehistoric period. Other items of the diet, however, can be discovered much more directly.

A "midden" is a deposit of food refuse. We recorded 71 midden sites and, as well, 37 "occupational sites". The latter included midden deposits, and perhaps ovens, stone-working areas, and other archaeological evidence.

The middens on D'Urville Island were largely made up of the shells of pipi, cockle, and mussel (mostly *Mytilus edulus*). Huge piles of these shells indicate a very heavy exploitation by prehistoric people—and one which might alarm conservationists today. Fish was the most common bone in the middens; species included snapper, barracouta, and groper.

Bird bones form a fairly minor part of the deposits. We were not able to identify the smaller bones, but among the larger ones were those of the penguin, kakapo, and moa. Seal and dog because of their size must have played a part in the diet out of all proportion to the small numbers of bones in the middens.

Source of Stone

D'Urville Island is of special interest in the study of New Zealand prehistory as the source of much of the best material for making stone

adzes and other tools. Metamorphosed or contact-altered argillites outcrop in several places on the island from Mount Ears south to Ohana. This material is also found in the mineral belt on the mainland to the south. The accessibility of the D'Urville deposits, however, and the generally excellent flaking quality of the stone seem to have made the island's resources among the most heavily exploited.

Black Mount Ears material and Ohana stone (grey-green with black veining) are found in archaeological sites from one end of New Zealand to the other. We recorded 14 quarry sites on the island. Almost all the coastal occupation sites contain some evidence for stone-working; it seems there was a flourishing export trade to all parts of New Zealand which depended on the skills of the island's stone-workers.

Remaining sites include pa (of which we recorded 3), terrace sites (20), pit and terrace sites (19), a single rock shelter, and an oven site. The terraces represent a necessary adaptation to the lack of flat land on the island. They were fashioned from the hillsides—like giant steps—to provide room for houses, sheds, and fish-drying racks.

"An Album of New Zealand Birds"

Have you purchased your copy of the jubilee publication—"An Album of New Zealand Birds"?

Get copies for your friends. Price: \$4.50, posted.

This beautiful album, which was launched on the market by Sir Robert Falla on 20 June, is a revision of two earlier books issued by the Society and reproduces the fine water colours painted by the late Miss Lily Daff for the original works.

Copies are available from—

The Secretary,
Royal Forest and Bird Protection
Society of New Zealand (Inc.),
P.O. Box 631,
Wellington.

Future in Balance

The future for archaeological sites on D'Urville Island, elsewhere in the Sounds, and throughout New Zealand is in the balance. What is needed is a national archaeological agency which can carry out a thorough survey of the country's archaeological resources, excavate sites which are threatened by subdivision or by any other development work, carry out a programme of public education on the need for site protection, and enlist public support and interest by the publication of archaeological results for a wide circle of readers.

Meanwhile members of the Society can help by discouraging (and preventing if at all possible) destructive unauthorised digging and by avoiding archaeological sites when they are engaged in any developmental work.

It was many years after the first voices began to speak up against the destruction of our forests and bird life that the conservation movement in New Zealand attracted the popular support and official approval it does today. If it takes nearly as long to prepare the public and the Government for the protection and conservation of archaeological sites, it will be too late.

Photoletter Pads Still Available from Eastern Bay of Plenty

LAST year the Eastern Bay of Plenty Branch produced an unusual and attractive writing pad in the best imported paper. Reproduced on every second page of the pad are selected black and white entries in the jubilee national photographic competition, with credits to the photographers.

The branch has 350 sets of pads and envelopes left from its printing of 2,000 and is prepared to give the proceeds from the sale of these to the organisers of the petition "To Save the Kaimais".

A photoletter set of pad and envelopes is available for \$1.25, post free (\$1.05 each for 10 or more sets), from: A. Milne, 44C Stewart Street, Whakatane. Payment is to accompany each order.

An Introductory Message from

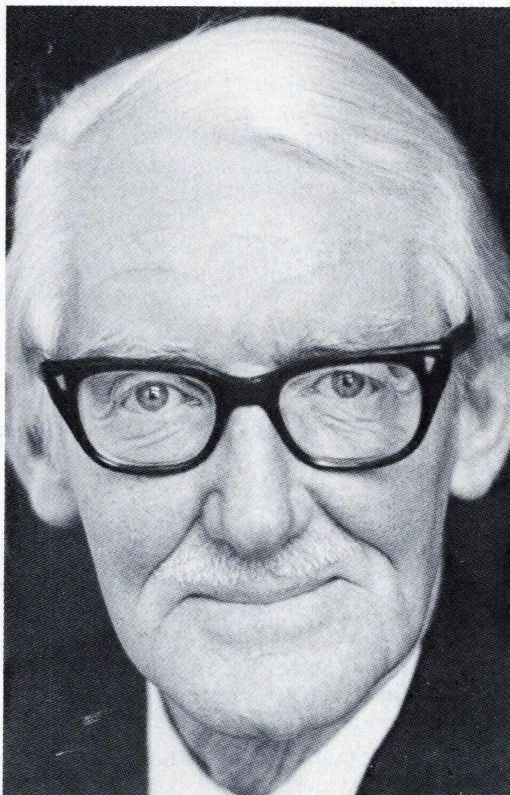
The New President—Mr J. V. Jerram

FIFTY-ONE years ago, a man of great foresight, a visionary perhaps, clearly envisaged the advance of civilisation in this country and estimated its probable effect on the unique flora and fauna of New Zealand. To preserve for posterity—for you, me, our children, and our children's children—much of the original New Zealand as it was before the coming of the pakeha, he, almost alone, founded a society dedicated to the protection of our extraordinarily beautiful country against the ravages and the legitimate needs of a greatly increased population.

He was Captain E. V. Sanderson, and on his demise he was succeeded in office by men possessed of similar ideals and of equal integrity. Of these, the latest has been Mr Roy Nelson, of whom it may be said that for 19 years he fostered and maintained the Society, at times almost alone, and his name will always be honoured not only within the Society but by men of all creeds and occupations, by heads of Government departments, and by Ministers of the Crown as a man of honour, of tact, and of uprightness unequalled within the confines of conservation.

He leaves to my care a body unique within New Zealand conservation circles. He leaves the first, the largest, and the strongest amateur conservation group in New Zealand history, with a strength of about 17,000 members from Auckland to Stewart Island, from New Plymouth to Gisborne, and throughout the centres of both islands. There is no other conservation body which can speak with the authority of our Society, nor which can call on—certain of a generous response—men who are specialists in any field of ecology, zoology, or any other science known to man.

Such, then, is my inheritance. Recently, within the Society, there has, almost miraculously, come forward a group of men noted in many professions, such as law, accountancy, and real estate, who are prepared to serve on committees and to give up their spare time and energy to fulfil the objects to which the Society is dedicated. With such men strongly united we cannot fail to succeed.



[*"Evening Post"* photo

Mr J. V. Jerram was born in Wellington and educated at Christ's College, Christchurch. He was deputy mayor of Eastbourne from 1950 to 1952, Government appointed nominee on the Coromandel State Forest Park advisory committee, and a member of the Waipoua Forest Sanctuary committee. For many years Mr Jerram has been a prominent member of the Society, having served as a Councillor and an Executive member. He was chairman of the Auckland Branch from 1969 to 1972. Since his retirement from the position of managing director, Bing Harris and Co. Ltd., Auckland, in 1972 he has resided in Taupo.

Beside our members there are other groups in various places who may see fit to throw in their lot with ours, sure in the knowledge that strength alone—united financially and numerically—can impress those who in their several ways, innocent or otherwise, seek to despoil

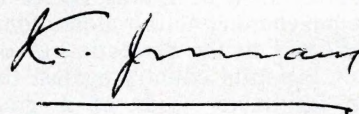
this most beautiful and as yet least spoilt of any country in the world.

We have been told by eminent men—Lord Porritt, the former Minister of Lands, Mr Duncan MacIntyre, and the present Minister for the Environment, Mr J. A. Walding—that conservation must speak with one voice and in unity. Our Society is the voice, and in unity we invite our kindred societies to group behind us.

Last year in Europe I saw many young New Zealanders touring and sightseeing on the Continent, living obviously on a shoestring. Surely, amid the grandeur and the glory of the cathedrals and the ancient monuments, they noticed the poverty, the dilapidation, and the pollution bequeathed to people there today along with the ruins of history. May we not look to those young people on their return to

their New Zealand homeland to ensure that desuetude has no place here and so take positive steps by joining us? We need youth, the fathers and mothers of the generations yet to be.

Problems in all directions lie ahead; tell me of one branch that has not some pressing need for action in conservation. I hope in the months that lie ahead to visit all or as many branches as possible to acquire first-hand knowledge of local difficulties. With your help, your trust, and—at times—your forbearance, I shall try to tread worthily in the footprints of those who have gone before.



Two New Forest Parks Established

THE creation of two new State forest parks in the lower half of the North Island, totalling about 107,000 hectares (264,000 acres) has been announced by the Minister of Forests, Mr C. J. Moyle. They are Haurangi State Forest Park, in the lower Wairarapa, and Ruahine State Forest Park, comprising most of the Ruahine Range. This brings to 13 the number of areas given forest park status.

Ruahine State Forest Park, of 93,000 hectares (231,000 acres), will complete a continuous chain of State forest parks from the Rimutaka Range in the south to the Kaimanawas east of the Tongariro National Park. The Forest Service has for a long time granted permits for hunting, tramping, and fishing in the forest and has provided a network of walking tracks, huts, river crossings, and road-end picnic sites.

The prime object of forest management in the park will continue to be the protection and rehabilitation of vegetative cover to slow down erosion and control water run-off and to provide for compatible recreational uses.

Haurangi State Forest Park, of 14,000 hectares (34,000 acres), extends northwards from Cape Palliser to include some of the headwaters of the Ruamahanga River south of the Martinborough-Pirinoa highway.

The area has always been popular with

hunters, but use of it has been hampered by problems arising from limited legal access. Only 100 km from Wellington and 50 km from Masterton, this new forest park is well suited to recreation and will relieve Wellington-generated pressure on the Rimutaka and Tararua Forest Parks.

There is free access to the parks except for hunters, who will still have to get permits from the Forest Service.

The conservator of forests, Palmerston North, will seek nominations for the advisory committees for the two forest parks from forest-user organisations.

Ideal Mountain Retreat

Bookings are very heavy at weekends for Ruapehu Lodge, which has just been improved with additional ablution facilities. However, the lodge is not being used as much as it could be during the week.

Ruapehu Lodge is an ideal place to have a few quiet days—either in winter or summer. It is also a pleasant stop-over place if you are travelling.

Details about charges and booking are set out on the page inside the back cover.

Bushland Oddities in Coromandel Peninsula

By W. Gillespie

NATURE seems to have singled out the Coromandel Peninsula in which to experiment and to produce some rather strange trees. In our many rambles over the area we have discovered several which called for a close study and some speculation.

Probably the best known is the square kauri, but there are others which may be of interest. On the summit of the Kopu-Hikuai road grows a mamaku ponga, *Cyathea medullaris*, with five heads growing from a single base.

On several parts of the peninsula *Dicksonia squarrosa* has the odd habit of sending out branches like bent arms, reminding one of a traffic officer on duty.

Queer Ponga

Perhaps the queerest example of the ponga family was found on a coastal hillside 3 miles north of Waihi. The silver fern, *Cyathea dealbata*, produced strange bulges about half way up the trunk. Seven of these trees stood in a group with a decided air of pregnancy about them! The affliction appeared to be contagious.

The arched rata is another of nature's freaks. In falling one rata has struck another so squarely that both trees have fused and continued to grow as one. A miniature forest

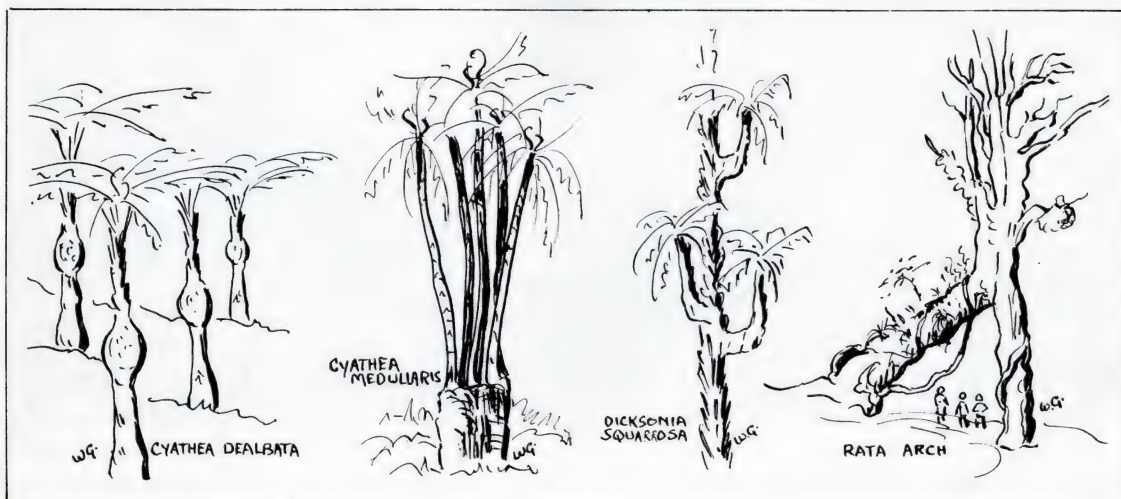
grows on the sloping trunk, including ferns, mosses, astelias, orchids, and a flowering *Senecio kirkii*. This feature can also be viewed from the Kopu-Hikuai road just off the main highway.

One does not expect anything unusual from a cabbage tree, *Cordyline australis*, but up the Kauaeranga Valley there is one which has not acted in the usual way, though a normal one grows beside it. It has sent up three stems each one of which is thickly covered from top to bottom in dead leaves. Instead of having one head at the top, this one has innumerable small ones in a cluster and the leaves are very much narrower.

Many-headed Nikau

We have also heard of a many-headed nikau in this area, but have not yet discovered it.

In two regions can be found a pohutukawa growing through a puriri tree. The one we have studied at intervals grows in the Waiomu Domain. The octopus-like arm can be traced along inside the puriri until it finally bursts through to grow out to the sunlight, where it flaunts a bunch of healthy leaves. The sight of this silent, relentless battle between two trees is a source of wonder. The puriri, however, does not appear to suffer much discomfort.



Beech Forests Should be Kept in Beech

By Greta Stevenson

THE attractively presented Forest Service booklet "Beech Forests" contains good evidence for keeping our beech forests just as they are. Who, after studying the cover picture and others inside the book, would ever want such beautiful beech forests converted to inferior pine, especially when no sound argument for such a change is presented?

ON page 18 is shown a "Tale of Two Mills".

Readers are invited to accept the first mill as an example of what the West Coast can expect from the use of beech forests as beech forests, and the second is given as an example of what will be found if large areas of beech are turned into pine.

The first illustration is of a completely derelict mill of the type from the bullock team days, and the second is of a modern motor-age mill operative in the 1970s. This contrast is

likely to mislead the public and does not seem a fair presentation of the case.

Pages 6 and 7 show exactly how vigorously and successfully beech will regenerate under unfavourable conditions. That it will regenerate under ordinary forestry conditions has been repeatedly stated by Forest Service officers and is common knowledge. The controlled utilisation of New Zealand's remaining lowland beech forests as beech forests is reasonable, but we remain implacably opposed to their conversion



[David E. Harding photo]

Beech forest along the upper Grey River. The areas on the lower slopes are included in the beech utilisation scheme.

to exotics for sound scientific reasons, which are set out below.

Use of Waste Lands

If more pine forests are required, many square miles standing uselessly in scrub and bracken, where the indigenous forest has already been destroyed, are where exotic trees should be planted. Such waste lands are conspicuous in the South Island, for example, in the Marlborough Sounds area, over a long distance of hill country north and south of Dunedin, as well as in other places. Forest Service officers argue that they do not own this land, but if the titles are not conveniently in Government hands, co-operative working with the present landowners should be possible. Surely no further beech forests can legitimately be destroyed when there is this extensive waste land.

Perhaps the most serious reason for not converting existing beech forest to exotic pines is the danger of catastrophic epidemics of plant diseases and pests sweeping through the plantations. Fungal blights and pests from the rest of the world are reaching us in ever-increasing numbers, and with the greatly expanded volume and speed of air travel the arrival of virtually all known species must be expected before long.

The needle leaf blight of pine which has run like fire through North Island exotic forests in the last decade is one example of such a trouble. *Dothistroma*, the causal fungus, has had such devastating effects that all who have passed through the Rotorua region recently will have noticed affected trees looking burnt. Some may have seen the excellent descriptive film made by the Forest Research Institute.

One or two species of pine have been virtually destroyed in some places, though by good fortune *Pinus radiata*, the most widely planted species, is not so badly affected by this particular blight in the adult stage. However, young trees and seedlings may be completely killed, and many older trees have been stricken and their growth reduced.

Pathologists of the Forest Service have worked out a successful scheme of treatment by aerial spraying with fungicides which, though costly, halts the enemy and reduces the loss, but the broad pure stands of *Pinus* are henceforth at risk from this parasite.

Insect Pests

Insect pests also cause concern. The wood-boring beetle *Sirex noctilio*, which established many years ago, has killed certain areas of trees and damaged many others. More recent invaders have yet to be assessed, but where such wide expanses of a single species are exposed parasites spread with uncomfortable rapidity.

Another plant disease which has suddenly confronted us in the last couple of years is the rust which has devastated most varieties of Lombardy and black poplar throughout the country. Many people will have seen sad-looking blasted poplar trees, all their leaves dead in mid-summer.

Rust fungi are legion, but the individual species are very restricted in their host range, with a complex and interesting life cycle. Not content with ruining one crop, as it were, each rust shifts over for a second stage of growth to a second host, which is also damaged. In climates with a severe winter where a summer stage is killed at the end of the season this habit enables them to persist the year round, one host being used mainly in summer and an alternate one in winter. The alternate host of the poplar rust which is sweeping the country is needle-leaved trees, particularly larch. So far, the fungus has not visibly attacked any needle-leaved plantations, but its advent is still too recent for the situation to be clear. There could be a double problem from this single fungus, and yet the fact must be faced that there are many more blight fungi to come.

Trials of Other Species Needed

Pinus radiata has proved very profitable to date in New Zealand because of its rapid growth and relative freedom from pests and diseases, but now that there is so much of it any blight or parasite that establishes will be widespread and serious. Foresters have been content with this single species success and have put little effort into trying other species.

In Bedbury in Kent, England, the Forestry Commission has set out trial plots with a wide variety of trees. If similar trials were set out in various parts of New Zealand, other trees might be discovered suitable for use in exotic plantations, so that these could be more sensibly mixed. Southern parts of North America,

So far.



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for example, East Texas and mountains in the north-east of Mexico, have extensive forests of mixed pine, with oak or other hardwoods, which have formed successful commercial forests over longer periods than any in New Zealand.

Could we not have trials of some of these here, not just to break the monotony of *Pinus radiata* but to present a more sensible defence against the spread of pests and diseases?

Benefits from Mixed Forests

A further important consideration in favour of variety in our plantations is that in the long term mixed forests have a much better effect on the soil than pine alone, which in a short time has a degrading influence resulting in the formation of infertile podzols. Broad-leaved trees, such as oak, improve fertility and leaven the effect of the pines. Fire, by far the greatest enemy of any forest, is much more serious in pine plantations than in native bush.

The utilisation of the extensive low-altitude beech forests of the West Coast is reasonable, but for the important different reasons under discussion we argue that they should be maintained in perpetual beech. Many areas are of little immediate use, except to yield chips from the low-grade logs which have resulted from previous misuse of the forest. Instead of following such utilisation by turning these areas into needle-leaved exotic plantations likely to require annual fungicidal aerial spraying, we believe that they should be given the proper silvicultural treatment to regenerate and give improved grades of beech logs. The Forest Service has already shown this to be possible. Instead of aerial spraying of exotics with fungicides, aerial topdressing of poor beech sites would hasten their recovery.

In the future the trends of the last decade are likely to accelerate rapidly, and demand for quality goods and craft articles will increase so steeply that hardwood suitable for flooring, decorative finishes, furniture, etc., such as beech, will become much more valuable. A West Coast industry supplying quality articles for such needs would be more profitable and more desirable than one oriented to the export of pine logs and chips.

Growing Importance of Tourism

Environment is the most booming subject of the day, and with the enormous increases in tourism and leisure, which have already begun

with the turnover of industry to electronic control and which experts everywhere assure us are going to grow almost beyond our imagining, the importance of keeping the great remaining forested reaches of the South Island in their own unique form is vital.

Already the money value of tourism in New Zealand exceeds that of timber and cheese. Tourism, standing at \$81.3 million for the year ending June 1974, is greater than timber at \$56.4 million and cheese at \$58.4 million. Export receipts from tourism are increasing rapidly; they have, in fact, risen from \$26 million in 1970 to \$81 million this year. Some of this increase is, of course, due to inflation, and it is fair to record that timber products produce considerable overseas income.

People can use and enjoy pine plantations in many parts of the world and in other parts of this country, but our beech forests are unique, and what we have left should obviously be preserved.

To sum up, it is argued that none of our remaining beech forests should be converted to exotic plantations, but all should be kept as beech for the following reasons:

- Because other large areas already deforested await plantation.
- Because it would be sound, healthy forestry free from epidemics of introduced pests and diseases.
- Because it would better preserve soil and resist fire.
- Because it would mean production of quality timber suited to present needs and future trends.
- Because our remaining unique indigenous forests are necessary as habitat for indigenous wildlife and for tourism, recreation, and the general amenity of our environment.

Summer Camp at Nelson

A camp will be held in Nelson next summer from 11 to 18 January.

The venue, the New Life Camp, in Stoke, 4 miles from Nelson City, is beautifully situated at the foot of a hill with a small creek on one boundary and a swimming pool in the grounds.

Further information can be obtained from J. K. Martin, 21 Stafford Avenue, Nelson, by sending a stamped addressed envelope.

Problems and Campaigns that Lie Ahead

BEFORE he retired at the annual meeting in June Mr R. C. Nelson prepared a review of events in the 19 years in which he had been President. He rounded off the review by surveying the work which lay ahead of the Society and some of the problems facing it. Mr Nelson's observations and recommendations for future activities are set out below.

OUR objects concern not only the quality of life in New Zealand but also the standard of living. Over the years we have relied on the products of the soil to provide overseas income with which to purchase amenities which mean a great deal to the average citizen. We depend greatly on water-generated power to provide light, heating, cooking, industrial energy, transport, radio, and television.

Obviously hydro-electric generation stations are essential, but with careful planning these can be maintained and others planned without desecrating the environment or our great national reserves such as Manapouri and Te Anau. These reserves have considerable influence on the quality of life and this influence will be much greater in the years ahead when citizens have more leisure and populations inevitably grow, in spite of efforts to control them.

Vegetative Cover

To maintain control of water and to preserve the soil it is urgently necessary that the natural vegetative cover on the highly erodable watersheds should be maintained from any threat whether from unwise farming, burning, or noxious animals. This is an imperative need. I quote from an article on the great power projects planned for the Clutha which was published in the "Dominion" of 25 May:

"Discussing physical aspects of the scheme the interim report sounds a cautionary note when it says the rate of erosion in catchments associated with the Clutha is among the world's highest, and the resulting quantities of mobile materials generated are such that it is necessary to obtain the fullest possible knowledge of the quantities that must be dealt with, their distribution throughout the scheme, and possible means of control."

To preserve unspoilt nature for the enjoyment of all in the years ahead the Society will have to be vigilant in its surveillance of the following matters.

Off-shore Islands

Several of the off-shore islands are fauna and flora reserves. Some have had cats, goats, and other pests dangerous to bird life released on them in past years. The Wildlife Service is doing what it can with available staff to get rid of these pests. Little Barrier, for instance, has wild cats which cause much destruction to bird life. Kapiti has opossums and introduced rats. Obviously the island as a bird sanctuary, though valuable, cannot be as useful as it should be while these pests are there.

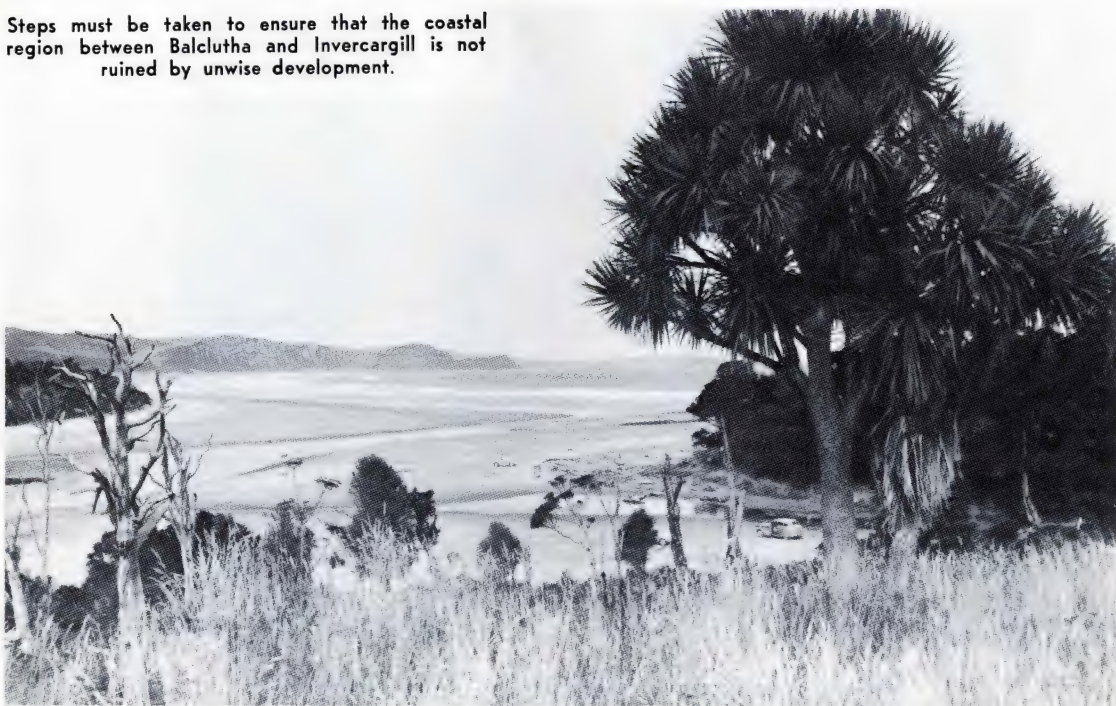
We contributed \$2,000 towards acquiring Mangere Island in the Chathams, which is just across the water from Little Mangere, an island not more than about 30 acres in total area, though it contains the only populations of two of the rarest birds in the world. It is vital that the introduced rat (*Rattus rattus*), which caused so much destruction to rare birds recently in the Muttonbird Islands, should be kept off Mangere.

From time to time we hear of efforts to arrange tourist trips to some of the islands, the Auckland Group in particular. This would be the surest way of introducing rats and of destroying much of the islands' value as sanctuaries for millions of birds of many species in danger of extinction because of loss of habitat.

The Society should do everything in its power to support the departments concerned in keeping the islands free from rats and other destructive pests and to advocate that there is adequate staff to do this work. The Department of Lands and Survey controls the islands, and the Wildlife Service, of the Department of Internal Affairs, deals with the fauna.

Islands such as Pitt (in the Chathams), Mana (near Wellington), some of the valuable northern islands, and important ones in the southern seas should be subject to the strictest conditions before permits to visit them are given. One of the conditions should require

Steps must be taken to ensure that the coastal region between Balclutha and Invercargill is not ruined by unwise development.



the fumigation of a ship against rats before it is granted a permit to go near the islands.

New Zealand has a very real responsibility, a duty to the world in fact, to do everything in its power to ensure that the natural ecosystems in these islands are not destroyed by thoughtlessness, vandalism, or ignorance. It is seldom understood that well over 100 islands are involved, over half under Crown ownership. The departments do what they can with the staff available. Goats, for instance, have been removed from the Three Kings and Cuvier, but Cuvier, which has tuatara, bush, and sea birds, including many petrels, still has introduced wild cats.

A case in point of interference to native birds at present is Codfish Island, where Cook's petrel and the island's fern bird are threatened with extinction because of the introduction of opossums and the unwise liberation of wekas. Our Southland Branch has offered assistance to the departments concerned.

Mamaku and Kaimai Forests

The incoming Council and Executive will need to take a greater interest in the future of the Mamaku Forest and the Kaimai Forest. Too much of each of these forests is being planned for conversion to exotics. Some areas

have been set aside as reserves, especially along the roadsides, but these forests are remnants of once great forests, have great scenic and recreational value, and are very important as habitat for birds now becoming rare. We have requested that an inspection of the areas zoned for conversion should be arranged in the near future.

Tasman Bay Area

The Department of Lands and Survey is carrying out surveys of coastal areas which should be planned for recreational purposes.

I am most anxious that master plans should be drafted quickly for the whole of the Tasman Bay coastal area from east of Nelson to Farewell Spit, including Westhaven Inlet. We must press for urgency with this work, as haphazard reclamation and other developmental proposals could result in development out of harmony with the potential of this fine district.

Similarly there is urgent need for master planning of the whole of the Coromandel Peninsula, a fine area with great potential which can be utterly ruined by haphazard planning.

Rotorua District

The late Mr J. F. Thomas was working with the authorities for planning a regional park sys-



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tem for the Rotorua district, and this scheme should be followed up.

Coastal Otago and Southland

Personally I have been very anxious to see master plans made for the coastal region between Balclutha and Invercargill. This coast has scenic splendour little realised by most New Zealanders, and steps certainly are called for promptly to ensure that this lovely coast is not ruined by unwise development.

Lakes Manapouri and Te Anau

Members will not need me to urge them to be on the alert to see that no effort to revise proposals to raise the levels of Manapouri and Te Anau shall ever succeed.

Beech Forests

The same attitude is needed against the proposals to clear fell beech forests and replace them with exotics regardless of the effects on the ecosystem (as yet unknown), the ultimate effect on the fertility of the soil, the degradation of recreational areas, and so on. For years I fondly imagined that forests zoned as "protection forests" would never be in danger from milling. This applied to areas of the Mamakus, but I have been disillusioned by what has happened recently.

Areas formerly considered "protection forests" are now being utilised on the ground that new methods of milling avoid the risk of erosion. This needs watching.

This in fact is one of the reasons I have been firm about milling the remaining stands of commercial indigenous forests on a sustained production basis. When all commercial stands are gone there is no doubt there will be those who will advocate—indeed demand—that mature trees be taken from national parks and scenic reserves. This must be avoided and fought if necessary.

Destruction of Pukeko

Among other problems to be faced is the long-standing one of the shocking destruction during shooting seasons of the lovely bird the pukeko. Guthrie-Smith said, while admitting the bird was troublesome in the kitchen garden, that it was the most wonderful pet and he strongly urged that every farm homestead should keep a couple. In many districts the average citizen never has the chance to see a pukeko; yet it is still on the shooting list during the shooting season for those with a licence to shoot and kill.

During the shooting season five acclimatisation societies permit each licence holder to shoot 10 pukeko each day of the season, so that theoretically each shooter can destroy 580 birds during a season. Of 25 acclimatisation societies, only one does not permit pukeko to be shot; most others permit each shooter to blast at up to 150 birds a season.

In view of the fact that any farmer who suffers from the browsing of pukeko on his crops can obtain permission to deal with the offending birds, the destruction by shooters, who admittedly just want something to shoot when ducks or swans are not available, of such lovely birds, most just left to rot where they are shot, can only be described as a crime against civilisation or an act of legal vandalism.

I Care 1974 Campaign

ONLY a few months remain of the 1974 I Care campaign. The subjects for the remaining months are:

August—Native fauna and conservation.

September—Recycling.

October—No litter.

November—Urban and rural development, population, law, and general attitudes.

December—Road safety, forests, reserves, and holiday locations.

Branches have apparently given good support to the campaign, which has received excellent radio publicity and good coverage by other media.

The "No Litter" month in October is an important one from the Society's point of view. The time has arrived for strong action to be taken against "litter louts".

When places like Singapore and Hong Kong, with their high populations, can keep even the crowded slum areas litter free, New Zealand looks careless in comparison. Many of our reserves and parks are strewn with litter, and people even regard these areas as rubbish dumps, whereas they should be taking a pride in keeping them orderly and clean.

One thing is certain: penalties will have to be imposed and enforced if anything worth while is to be achieved. Heavy fines are imposed in many countries for litter, and this seems to be the only way to impress on the public that litter will not be tolerated here.

Clutha River Development Will Provide More than Electricity

THE interim report of the Clutha Valley Development Commission, released in May, recommended the establishment on the Clutha River of a new major hydro-electric power scheme in the South Island. Unlike some other suggested hydro-electric schemes, the Clutha Valley development does not appear to interfere drastically with the environment and thereby does not provoke the opposition of conservationists. In this article N. E. Dalmer, chairman of the Horowhenua Branch and national treasurer, reviews the background to the scheme and discusses its significance to the country's development.

THE Clutha is one of the two largest rivers in New Zealand with a mean discharge of 19,000 cusecs from a catchment area of about 8,000 square miles or 8 percent of New Zealand's total area. Its source lies in the three glacial lakes—Wakatipu, Wanaka, and Hawea—which are supplied from a 95-mile length of the main divide of the Southern Alps. These three lakes largely stabilise or smooth out the fluctuating run-off from the high country. The fall in the 200 miles to the sea is 910 ft, from Lake Wanaka as the base, or from Lake Wakatipu 1,013 ft.

In the development of any river scheme the maximum use possible must be made of its energy potential, consistent with economic considerations.

Overseas Projects

Two years ago an interdepartmental committee reported to the Commissioner of Works on the effects of hydro-electric power development on the resources of the Clutha valley, and a statement I presented to the Council of the Society drew attention to similar developments overseas—the Tennessee Valley Authority in the U.S.A.; the Mekong River Project in Southeast Asia, involving Laos, Thailand, Cambodia, and Vietnam within the ambit of the United Nations and with direct assistance from many countries, including New Zealand; and the Snowy River scheme in Australia, involving the creation of a huge lake of nine times the volume of Sydney Harbour and the submerging and resiting of the township of Adaminaby.

Reference was also made to the two major river developments in New Zealand—the Wai-

kato with its chain of eight power stations with an installed capacity of 1,044.8 megawatts and the Waitaki with its three major stations and the small station at Tekapo aggregating 890 megawatts and further developments in the planning stage to bring the total to over 2,400 megawatts.

The statement concluded: "Any development of the Clutha River as a source of energy must be based on economic considerations, full account being taken of the welfare of those people who would be affected and, in some cases, displaced in the cause of progress."

Council finally adopted the report on 4 June 1972 in these words: "The development of the Clutha does not appear to offend greatly the objects of the Royal Forest and Bird Protection Society of New Zealand (Inc.) and in consequence development must be based on economic and human considerations affecting the welfare of New Zealand and of the people concerned. To this end the Society would support the establishment of an independent authority to study all aspects of the proposals and finally to recommend the best scheme resulting from their deliberations."

Detailed Study

In a note it was suggested that the Nature Conservation Council might carry out the detailed study.

That detailed study has now been carried out by the Clutha Valley Development Commission, set up by the Government in 1973 after the disbanding of the liaison committee of 1972.

Six Low Dams

Mr Watt, the Minister of Works and Development, in releasing the interim report of the commission, said in Cromwell that the Government accepted the proposals involving the construction of six low dams on the Kawerau and Clutha Rivers above Roxburgh. This acceptance will enable detailed planning to proceed for the maximum economic utilisation of the river flow and fall between Lakes Wakatipu, Wanaka, and Roxburgh, say, 19,000 cusecs and 580 ft.

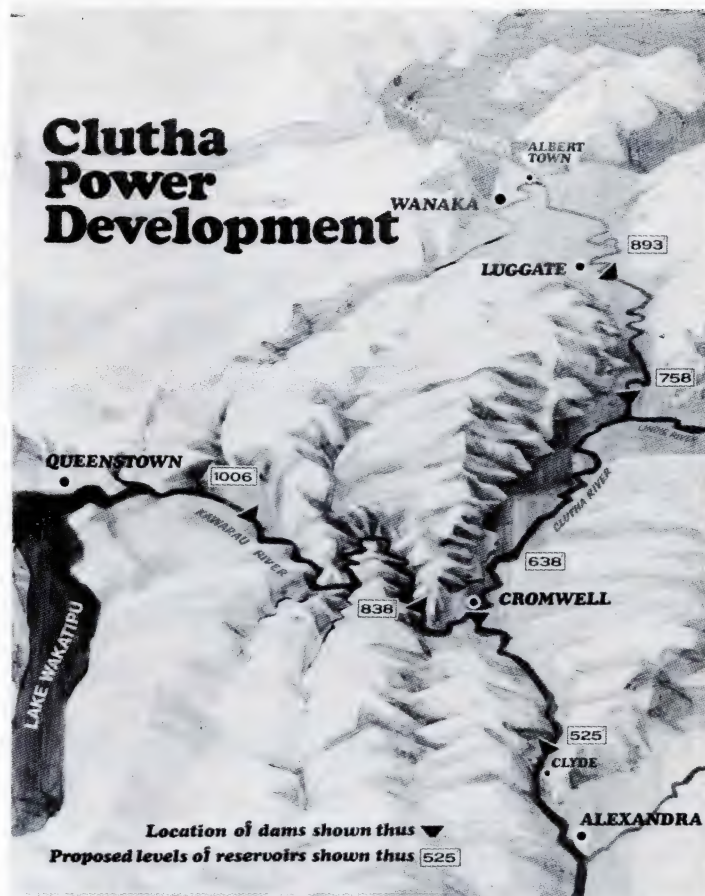
The installed capacity of the scheme envisaged is 1,490 megawatts, double that of Manapouri, but because of the minimal area of storage and the limited operating range provided for, this 1,490-megawatt capacity will meet peak demands and not sustained load as does Manapouri.

The scheme put forward by this independent authority more closely approaches Proposal D (1,052 megawatts) set out in the original report and is in fact a variation of one of the six alternatives considered by the commission. There are, however, variations in the head water levels and provision for a low-level dam (640 ft) 2 miles down stream from Cromwell which will create a storage area of 8 square miles.

Some 60 to 80 acres of orchards will be lost, or between 3 and 4 percent of the total in the Cromwell-Alexandra area, or less than 0.4 percent of the New Zealand total (excluding apples and pears). Less than 2,000 acres of farm land will be flooded, but it is contended that this will be offset by increased opportunities for irrigation in an area where rainfall averages only 13 to 19 in. a year. The railway will terminate at Clyde, and roads, highways, and bridges will be relocated or rebuilt to best advantage.

Major Effects

The submerging of the lower part of Cromwell—the old business area and some houses—and the marginal inundation of the town-



ship of Luggate and the lucerne-processing plant are the major effects of the scheme.

To meet this major upheaval affecting the lives of some 970 permanent residents of Cromwell (two-thirds of which are young family people or single persons working in the town) and of farmers and others bordering the river, some radical recommendations, even necessitating legislative action, are put forward by the commission. The so-called "open-ended solatium provision" entitles people whose land was taken to claim, in addition to what they could otherwise claim, compensation for social hardship. This could include consideration of family and historical association with the property, including the length of time of ownership.

Problems Associated with Erosion

This multi-purpose harnessing of a huge river where the rate of erosion is ranked as one of the highest in the world has not been

taken lightly by the commission and the problems associated with erosion—geological formation, stability, and slumping—are under constant and continuing study by the Geological Survey and Ministry of Works and Development as also are questions of ecological effects, climatic conditions, recovery of minerals in collaboration with the Otago Catchment Board and the University of Otago as occasion warrants.

Beside the six dams of low level, other measures to control erosion will be the restricted operating range, the control of river flow, and in particular that of the lower reaches below Roxburgh by so running the Roxburgh power station on a more or less constant load so that it can accommodate the high flow of the river when all upper stations are running to capacity to meet peak demand.

Of the 21,500 acres of land under irrigation, 800 acres will be lost, but the scheme provides for 40,750 acres to be irrigated and that more effectively, and studies are continuing in this field and on the balance between high and low country and the re-establishment of orchards.

Provision for Reserves

Other important questions are receiving the attention of the commission—facilities for recreation, the setting aside of suitable reserves, including the lake shores, and landscaping—all of which have a national aspect.

The planning of Cromwell, housing and workshop facilities, relocation of the State highway system, administration, education, public services, including hospitals, sewerage, and water supply, all have rather a more local but very important place in the establishment of any major public works project.

A perusal of the interim report of the commission leaves one with admiration for the breadth of consideration given. The Clutha River development is not just another hydro-electric scheme for producing electric power; it will also provide associated irrigation and recreational facilities. Moreover it will lead to economic progress across a wide front, which will be achieved through integrated planning and a multi-purpose approach.

Shooting of Protected Birds

IN a recent case of the shooting of 30 godwit and knot by four Maoris the fines were only \$50 for two of them and \$25 for the other two, with some Court costs. The Wildlife Act provides for a penalty of up to \$100 for one protected bird taken and \$4 for each further bird and for confiscation of guns and other gear, including cars and boats being used. The stipendiary acclimatisation society ranger and three honorary rangers took the guns, but at the trial the magistrate refused a request for their confiscation. Cases like this can result in rangers' and solicitors' costs being more than the fines imposed.

This kind of poaching is rife from the Kaipara Harbour to the far north. Members of the Society are urged to watch for it and to be prepared by finding out forthwith the addresses of the nearest wildlife, acclimatisation society, and honorary rangers to facilitate quick action.

Poaching on the Manukau Harbour and the Firth of Thames hardly occurs owing to the bird-watching activities of members of the Ornithological Society, some of whom are honorary rangers. Most are also members of this Society.

There is not enough cover of the bird haunts in the more remote north.

In spite of what I consider to be utterly inadequate punishment for poaching I still urge members to do all they can to prevent the destruction of our protected birds.

—H. R. McKenzie, Clevedon

Mr R. C. Nelson, past president, comments on the above report as follows:

I have heard that it was claimed during these shooting prosecution proceedings that the godwit is shot when it returns to Siberia during its annual nesting flight.

Such a claim would be entirely without foundation. During my years as President I looked into the laws regarding protection of bird life in Russia, and I was most impressed with what I learnt.

Russia has very good laws covering protection and conservation of bird life; in fact New Zealand could probably learn something from the Russians. I would say their attitude towards bird protection is equal to the best elsewhere in the world.

Mr Nelson Honoured on His Retirement

THOUGH he wished for neither gift nor official farewell after his 19 years of outstanding service as President of the Society, Mr R. C. Nelson agreed to attend the luncheon which followed the annual meeting in June so that his friends could wish him well.

ONE of Mr Nelson's oldest friends, Mr Bernard Teague, of Wairoa, in most eloquent and forthright terms, outlined the remarkable contribution Mr Nelson has made both during his term as President and earlier as an enthusiastic member, Councillor, and Executive member.

Mr Teague said: "I regard Mr Roy Nelson as one of the greatest patriots in this country's history. This man has given his life, his substance, and in fact his all in the name of this country's lovely natural environment. His dedication and tenacity of purpose to preserve its flora and fauna are something every citizen should be proud of.

"And over the years Roy has steadfastly refused to accept any honour. What is more he has recommended others instead. His purity of motive is something unique in my experience.

"I know others more able than I wanted to honour Mr Nelson, but have been constrained by his insistence that no official farewell should be given him. I know plans were made to do this occasion justice, but these were abandoned at Roy's insistence. However, I felt someone should take the initiative and speak.

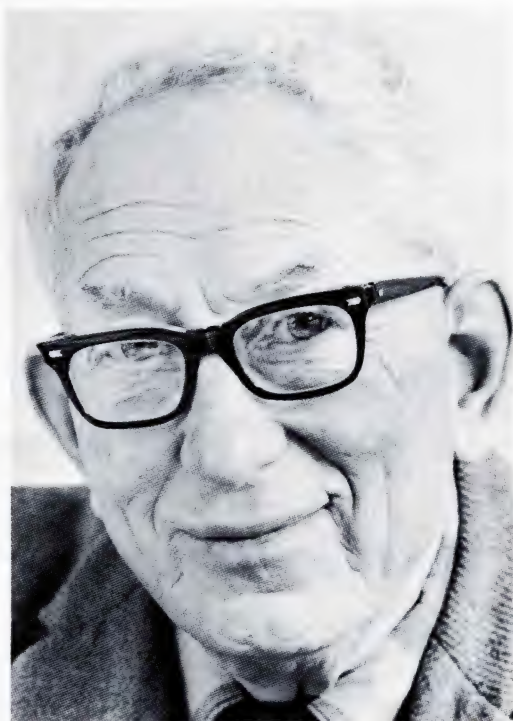
Great Inspiration

"Roy Nelson has been a great inspiration, a great Scout, and a great and loyal friend. His gentlemanly approach and conduct have won him the respect of Prime Ministers, Ministers, departmental heads, and many other people in the important walks of life.

"I know that you will join with me in wishing him a long and enjoyable retirement from the pressures of President. I am delighted to know that he has agreed to continue to help in various ways," concluded Mr Teague.

Mr Caccia Birch, of Gisborne, then spoke briefly and concluded by expressing the hope that Mr Nelson would be able to relax a little, though he could not imagine his not continuing to give his full support and help to the Society.

Mr Peter Dickson (Wanganui) extended a



Mr Nelson.

warm invitation to Mr Nelson to come to Bushy Park for a rest.

Captivated Gathering

In his usual cool and deliberate way Mr Nelson captivated the large gathering in his reply as he related reminiscences about his childhood at school, his working life, and his long and distinguished service to the Scout movement dating back to about 1914.

"I am just talking aloud. This is not unusual to me. Over the years I have talked to the trees and the birds on many occasions. Even every tree has its own personality, and I love them all," said Mr Nelson.

"The Society has a great responsibility today. I know it always has had, but the challenges

today are the greatest in the history of this country.

"We have to teach the kids of today to love nature. Often at the Brookfield Scout Camp I am moving about. I heard the comment recently when someone said, 'Where is Maire [his Scout name]?' The answer was: 'Over in the bush talking to the birds.' And I must admit it was true.

"I get close to the Creator when I am in the bush. We must understand that we cannot upset the organisms of the earth—the ecosystem—without upsetting so many wonderful things God created. God not only 'was', but 'is'. He is the architect and managing director.

Kept Promise

"And how did I come to be President of this great Society? My friend Mr Arthur Harper called me and said: 'Nelson, if anything happens to me, I want you to promise that you will carry on where I leave off.' I promised; then Mr Harper passed away. I did not expect it, and I had to keep my promise. I have carried on for 19 years; perhaps I have stayed

Need for Technical Adviser

IN recent years there has been ever-increasing pressure on the Society to deal with a wide variety of environmental problems. It now plans to set up a conservation sub-committee, assisted on a voluntary basis by people having a wide range of expertise.

It is intended to appoint a highly motivated person with a deep concern for natural environment to assist specialist sub-committees and branches of the Society.

The Executive is convinced that such an appointment is necessary and will be advertising the position later in the year if satisfactory office accommodation can be arranged.

This job is regarded as most important and will therefore carry an appropriate salary. It will not be a 40-hour, 5-day-week position.

Anyone interested is asked to write to the deputy president, Mr A. A. Pascoe, P.O. Box 631, Wellington, for further details. Correspondence should be marked "personal" and will be treated as strictly confidential.

too long, but I have a feeling that the grand old man would not be dissatisfied with my performance.

"All I have done—by the grace of God—is what I should have done. I deserve no special thanks. I know John Jerram and his able Executive and our fine and loyal staff will continue and carry the torch where I and past Executives have left off.

"Anything I can do to help I will do. I must admit I am somewhat relieved to lay down the reins of office and have the great and heavy responsibility of leading this old and esteemed Society pass to someone else. But it is a task that I greatly enjoyed and during which I have made many sincere and loyal friends. I am still a part of you. God bless you all," concluded Mr Nelson, who was then given enthusiastic musical honours.

It was a moving occasion and there were tears in many eyes and lumps in many throats.

New Sections Formed

MORE than 100 people attended a public meeting at Waikanae on Sunday, 30 June, for the purpose of setting up a section of the Wellington Branch to represent the Kapiti coast area.

The Wellington Branch chairman, Mr Eric Lennie, and Mr Norman Dalmer, national treasurer and Horowhenua Branch representative, outlined the objectives. The new President, Mr J. V. Jerram, of Taupo, and the deputy president, Mr A. A. Pascoe, also addressed the gathering.

It was unanimously decided to form a section, and a strong committee was elected to launch it.

The Auckland Branch arranged a meeting at Manurewa on 10 July to set up a South Auckland section. The public relations officer, Mr A. W. V. Reeve, attended and had discussions with the Auckland executive committee on various other topics.

A section in North Auckland is also planned by the Auckland Branch. It is hoped that eventually this will be a new branch.

Such keen interest in expanding the Society's activities is heartening, and it is hoped that other branches will follow suit to allow local issues to be dealt with by those most competent to do so—the local residents.

The Wellington Branch also has plans for establishing a Porirua Section soon.

Positive Propaganda in Art Exhibition

TO wind up the Society's jubilee year in Wellington the Wellington Branch held a successful art exhibition in the Rothman's Cultural Centre toward the end of March. More than 100 works by New Zealand artists were displayed. In the "N.Z. Listener" of 27 April Peter Cape wrote this review of the exhibition:

THERE are two ways in which art can be used as propaganda—and we have had very little experience of either in New Zealand. We have no polemical painting and very little that makes any social comment. When in 1937 Lois White painted a not very powerful figure composition called "The War-makers", there was a public outcry; where Goya painting his "Third of May in Madrid," or Picasso working on "Guernica"—or even David painting the "Oath of the Horatii"—would have got to in this country, heaven knows.

The other propagandist use of art can be to assemble an exhibition on a common theme and use the power of reiteration to make an impact. This is a gentler approach, perhaps more suited to our society, and when the selection of works is done with taste and their assembly with skill, the impact can be considerable.



[*"Evening Post"* photo

Stephen Ellis, whose mural publicising the exhibition was hung in the Wellington District Savings Bank.

The Royal Forest and Bird Society's golden jubilee exhibition at Rothmans at the end of March made this impact. Ecologists and conservationists—usually, it seems, convinced that cameras or children's poster art can speak more clearly than anything else—often overlook the fact that literal truth or extended imagination can both be very dull. Paintings and prints—particularly good paintings and prints—can on the other hand catch an atmos-



[*"Evening Post"* photo

Upper Hutt Art Society member Betty Hathaway and her daughter, Kaye, standing in front of Mrs Hathaway's oil painting "Red-billed Gulls", which was sold for \$48.



["Evening Post" photo]

Artist May Dyer, of Karaka Bay.

phere, an ambience, an emotion which no other medium can ever do.

This exhibition, containing some 110 paintings by artists of the first and second echelons, with a few from the third, included works by R. J. Waghorn and John Sutton, Juliet Peter and Susan Skerman, and bird paintings by Molly Falla and Joan Lindsay, and even some rare hand-coloured lithographs from the nineteenth century. All but half a dozen of the works were of high quality and the wide variety

of subjects and their treatment—even though they all lay within the scope of forests and birds—prevented the kind of boredom which seems inevitable when one is faced with what is simply an exhibition of land- and bird-scape painting.

This prevention itself showed a high level of skill in selection and in hanging, but there was a higher level again in the way that the prints and paintings selected took one into the bush and among its wildlife and convinced one—in a way that no poster or photograph ever could—of its ultimate value and the need for its preservation.

In this, which was of course its aim, this exhibition showed that in the visual arts overt polemics may no longer be necessary. There was no need to show us bulldozers or chipping plants, or to list the falling statistics of bird populations. The exhibition was positive propaganda and, as such, was far more telling.

[The exhibition was attended by 1,200 people—twice the average for a week at such an exhibition. Of the 110 paintings hung, 86 were for sale at prices ranging from \$4 to \$200; 32 were sold, two at \$200 each, for a total of over \$1,500. A commission of 15 percent was retained, and after expenses the branch made a little over \$130.

"The publicity and good will were worth much more," said Mr Eric Lennie, chairman of the branch.]

"Album of New Zealand Birds" Issued in Wellington

A LARGELY attended function was held in the Alexander Turnbull Library, Wellington, in June to mark the issue of "Album of New Zealand Birds", a revision of the Society's two books on forest and sea birds first published in 1932 and 1940. The revised book was released as part of the golden jubilee celebrations and contains all the illustrations prepared from the original water colours painted by Miss Lily A. Daff for the first editions.

Sir Robert Falla congratulated the Society on reproducing such a fine work and said he had known personally all those who had been associated with earlier editions, including the late Leonard Cockayne, whose beautifully worded preface in the original print was still a gem.

"It gives me great personal satisfaction to

see the sustained and growing interest in native birds and the environment in general," said Sir Robert, who has spent most of his life studying bird life and nature.

The deputy president (Mr A. A. Pascoe) presided and complimented A. H. and A. W. Reed Ltd, who had been responsible for the new publication.

He presented copies of the album to Sir Robert Falla and to Mr Brian Ellis, who was responsible for updating the text and writing two new ones on the takahe and the shoveler.

Mr Pascoe, on behalf of the Society, handed the original paintings and materials to the librarian of the Alexander Turnbull Library, Mr J. E. Trave, for safe keeping.

Annual Meeting in Palmerston North

Well Attended

ONE of the largest attendances for some years and a happy and businesslike atmosphere made the 1974 annual meeting and Council meetings memorable occasions.

WITH the need to elect a new President after 19 years, the proposed Rule changes, and the increase in subscription rates, there was plenty of food for thought, apart from the wide variety of environmental matters in which the Society is involved.

We extend our sincere thanks and appreciation to the Manawatu Branch, which so ably hosted the meetings.

Mr R. C. Nelson presided over his nineteenth and last consecutive meeting, surely a remarkable record, and with his customary understanding and gentlemanly approach to the business, all matters were attended to in the time allowed.

The meeting was opened by Councillor B. Forde, chairman of the Palmerston North City Council's reserves and environmental committees.

Revision of Administration

The main business dealt with by the meetings reflected the continuous revision of the administration of the Society, which provides the authority and resources necessary to promote its objects more effectively and to ensure its future growth. Such measures represent the culmination of an era of remarkable growth under the wise and able leadership of Mr Nelson. It is expected that there will be further substantial progress under its new leadership.

The accounts and balance sheet which are enclosed as a supplement to this issue, reflect the efforts of the Executive to present members with more information about the Society's finances and in particular the fact that substantial sums represent specific trusts and cannot be used for the general purposes of the Society.

A major revision of the Rules (henceforth to be known as the Constitution) of the Society was presented for approval. The proposed amendments had been circulated to all members in the May issue of *FOREST AND BIRD*, and

were adopted with minor amendments. Copies of the Constitution, as amended, will be available without charge to members through their branches when it has been approved by the Registrar of Incorporated Societies.

An important amendment to the Constitution gives the Executive power to authorise a branch to set up a section in its own area. Such a section would have its own officers and committee and be able to apply to Council for election to branch status after a probationary period. It is hoped that both branches and individual members will take advantage of this provision to set up sections in country areas and districts within the metropolitan areas of the larger branches and so facilitate the handling of purely local problems. The Executive hopes that this will encourage membership and provide a voice within the Society for those who might otherwise consider forming independent groups.

New President

Mr John Jerram, of Taupo and formerly of Auckland, was elected President, and under the Constitution Mr Nelson becomes the immediate past president and member of the Council and Executive. The continuity which this new position creates will be advantageous. Members elected to the Executive are listed on the last page of this issue.

The Executive's recommendations for increases in subscription rates were discussed at length and finally adopted by Council. This is great encouragement to the Executive and to its administration and finance sub-committees. (The supplement to this issue notifies the increases and the financial requirements of the Society to ensure that its objects are promoted more effectively.)

Council also approved the Executive's recommendation that capitation should be based on a scale according to membership, with a minimum of \$100 for each branch. This repre-

sents a considerable increase for the smaller branches.

Sections Become Branches

All present sections were elevated to branch status, with the intention that all areas of the country should be represented by a branch. Under the Constitution branches have the responsibility to promote the aims and objects of the Society in their own areas. The only restrictions are that negotiations with Government or national or overseas bodies shall be conducted through the Executive (in practice "Government" is interpreted to mean central Government, including Ministers of the Crown and head offices of departments). Moreover, authority to institute legal proceedings other than for breaches of the Wildlife Act is reserved to the Executive.

Thus, with enhanced status and increased financial resources, an obligation is placed on every branch to promote the Society's work in every area in the country. It is confidently expected that the increased allocation will enable branches to spread their activities, with resultant benefits to the Society.

Payment of Air Fares

Council also approved a recommendation that the Society should pay the air fares of branch representatives (Councillors) to ensure continued representation at all Council meetings, not only of all branches but also of the most able representatives available to carry out the Society's work irrespective of the financial position of the branch or individual concerned. Such fares would be payable to the branch only in respect of representatives actually attending Council meetings and would be so paid notwithstanding the actual mode of travel adopted. There is, of course, no need for any branch to accept these capitation grants or air fares if it considers its financial position will enable it to undertake its obligations without this assistance.

It was reported that the Executive had just agreed to the exercise of an option to purchase a valuable development site at 3-4 Kent Terrace, Wellington.

A general discussion on native plant protection legislation took place. National office is still collecting information on this subject.

It was reported that indigenous timber was still being exported, the bulk of it being from

private stands of bush. Attention was drawn to Section 34 of the Soil Conservation Act, and the Executive was directed to take strong action in this matter.

The beech forest issue is also to be followed up strongly by the Executive.

Clutha Valley Development

A resolution commending the Government for its decision to endorse the recommendation of the Clutha Valley Development Commission was accepted by Council, on the recommendation of Mr Dalmer, with a proviso that the New Zealand Wildlife Service be alerted to the possible inundation of the only known habitat of certain species of native fauna.

In his brief statement Mr Dalmer drew attention to the fact that the setting up of this independent commission was in conformity with the Society's findings 2 years ago in Dunedin after his submission of a report on the recommendations of an inter-departmental committee.

An article on the Clutha River scheme appears elsewhere in this issue.

Among other topics discussed were the shooting of pukeko, noxious animals, the Society's policy on nuclear fission (which is subject to a report by the Executive), opossum research, and various other environmental matters.

It was an encouraging and lively meeting.

Bird Models Needed

Napier Branch is assisting in a community project to install a native bird call box in Napier's Clive Square.

By pressing a button to select the song or call of one of 12 native birds the listener can hear his choice from nearby trees.

To give added effect, it is proposed to add model birds, life size or slightly larger, of six of the 12 birds.

Much difficulty is being experienced in obtaining either finished weather-proof replicas or models from which replicas may be cast.

If any branch or member can assist by supplying models, it would be greatly appreciated. Please write to Mrs T. G. Lamburn, 5 Exeter Crescent, Napier.

Waikato Party Explores Titiraupenga Mountain

By Audrey Eagle

ON many excursions in various directions the attention of the Waikato Branch members has been attracted to the symmetrical shape of Titiraupenga Mountain with its distinctive pinnacle of rock. In March their curiosity about what grew on that rocky knob and all the way up to it was satisfied when a party climbed the mountain.

Because Titiraupenga is near Lake Taupo, the leader, Stewart Gray, had planned an early start, but leaving Hamilton at 6.30 a.m. was apparently no deterrent; 90 people arrived at the Arataki mill in a large bus and numerous cars.

At the end of an unused logging road was a Y.M.C.A. hut and at this point the party divided, one group staying in the vicinity and exploring the bush adjacent to the Arataki Stream. The majority, including two over the age of three score years and ten, climbed the mountain, the most energetic members going up to the summit of the rocky eminence (1,043 m).

The well-defined track first passed through a cut-over area which is now dense with kamahi (*Weinmannia racemosa*), five-finger (*Pseudopanax arboreus*), karamu (*Coprosma robusta*), wineberry (*Aristotelia serrata*), fuchsia (*Fuchsia excorticata*), and *Blechnum capense*. Above this was a stand of hinau (*Elaeocarpus dentatus*) with trunks about 15 cm in diameter; these trees were growing close together to the exclusion of almost all other plants.

Tree Ferns

Mr R. D. Cresswell, a visitor from the Tauranga Branch, showed several people the difference between the two tree ferns *Cyathea smithii* and *C. colensoi*; conveniently these two very similar plants were growing side by side. The Waikato members had not seen *C. colensoi* before.

When the original uncut forest was entered on the upper slopes the first noticeable feature was the broadleaf (*Griselinia littoralis*), which though not tall, had trunks a metre or more in diameter. Waikato members are accustomed to the shrub-sized broadleaf on the top of



Some of the party coming down the steep slope from the summit of Titiraupenga Mountain. Holding on to the rope is Miss Wendy Asplin.

Pirongia, Te Aroha, and Maungatautari Mountains and therefore found these broad-trunked broadleaf very impressive. There did not appear to be any other trees apart from the occasional tall totara with trunks about 60 cm in diameter.

Common in this area were stinkwood (*Coprosma foetidissima*), *Quintinia serrata*, mountain toatoa (*Phyllocladus alpinus*), mingimingi (*Cyathodes fasciculata*), and three *Pseudopanax* species—mountain five-finger (*P. colensoi*), raukawa (*P. edgerleyi*), and *P. simplex*. Most of these plants continue up the 42-m-high ignimbrite knob to its summit in spite of the

steepness of its rocky sides. In addition on this highest point there was *Cyathodes empetrifolia*, a few plants of the mountain cabbage tree (*Cordyline indivisa*), and an olearia.

Plants which were expected to be fairly plentiful, as they had been seen to be common on trips to nearby Pureora Forest, were New Zealand holly (*Olearia ilicifolia*), narrow-leaved mahoe (*Melicytus lanceolatus*), and kaikomako (*Pennantia corymbosa*), but only one each of the first two plants and two of kaikomako were observed. One plant which was

not expected, but which was found near the summit, was a single juvenile *Mida salicifolia*.

Many Birds

Considering how large the invasion of people was into the quietness of the bush it was pleasing that so many birds were seen or heard at different times.

The following list was made: whitehead, tui, tomtit, pigeon, fantail, and bellbird, the latter being particularly plentiful on the downward journey.

Environmental Studies Seminar in Auckland

AN environmental studies seminar sponsored by the Auckland Branch was held for primary teachers in the Auckland area. Attendance was either live-in or to daily sessions.

Speakers at the sessions were: Peter Ohms, science lecturer, Auckland Teachers College; Eric Jackson, science adviser, Department of Education; Professor John Morton, Department of Zoology, University of Auckland; Jim Forbes, supervisor of the A.R.A. Nature Trail; Anna Soutar, formerly of the Hauraki Gulf Maritime Park Board staff; John Stacpoole, architect for the Historic Places Trust, and Ray Chapman-Taylor, teacher. Members of the Auckland Branch assisted with sessions in the bush.

Attendance was less than expected, a dozen teachers being present, probably because of lack of advertising within the schools. However, the general feeling, at the conclusion of the weekend was that the seminar was a success, as it had given a small group of teachers a chance to meet with concerned people, discuss ideas, become aware of new material and different approaches, and suggest ways in which a Society such as ours could give help to teachers.

Environment for Enjoyment

The most pronounced view was that the message we must get across to school children is that the environment is there for their enjoyment, but to enjoy it they must know it, respect it, and love it and also know their place in it. From this came the question: How best to achieve this? It is here that some teachers feel inadequate and consider that such a group

as the Society, with its experts in botany, zoology, and other subjects, can make a contribution.

Methods mentioned by various participants at the seminar were:

- Providing experts to accompany school groups in the bush, to the beach, and other places.
- Experts in botany and other subjects to take groups of teachers to the various resource areas in their locality, for example, beach, Maori pa site, or scenic reserve, for an intensive study of those resources, after which the teachers would feel more competent to discuss them with their classes.
- Development or sponsorship of study centres for teachers where they could have more concentrated field study and discussion.
- Repetition of this seminar on an annual basis, preferably as an in-service course, but open to teachers in training and at both primary and secondary levels.

These suggestions will be considered by the Auckland Branch committee and put forward to the Society's education committee for consideration. It may well be that we can offer further ideas, and more assistance to teachers in Auckland, and in other centres, on these lines.

—B. G. Spiers

[There appears to be scope for similar seminars in other centres. They would provide opportunities for teachers to meet officers of the Society and exchange ideas, incidentally perhaps to acquire some of the enthusiasm and expertise which are such important factors in the work of the Society. An amplified report on the Auckland seminar is to be sent to each branch.]

Bushy Park Function

SOME members of past Bushy Park, Wanganui, sub-committees at a "Thank You" function given in their honour at the homestead on Anzac Day.

The Society is deeply grateful to the many Wanganui people who over the years have done so much for this wonderful asset. The new custodian, Mr Roy Studd, is on the right of the back row.



Efforts To Save Hawaiian Nene Succeeding

DURING a tour overseas last year to study the management of rare and endangered wildlife Mr D. V. Merton, Fauna Conservation Officer of the Wildlife Service, Department of Internal Affairs, Wellington, had the opportunity of observing the results of efforts made in Hawaii to save the Hawaiian goose or nene.

In his report Mr Merton comments that because isolated island faunas are generally much more vulnerable to change than those of less isolated countries or continents, they often require special conservation measures to survive. The Hawaiian goose or nene is a case in point.

In the eighteenth century there were about

25,000 nene on the Hawaiian islands, but by the 1800s the number had been reduced to about 50 through exploitation for food, loss of habitat due to settlement, and the introduction of mammalian predators and competitors.

By 1949 there were about 35 birds left in the wild, and that year a captive breeding programme was begun in Hawaii and at the Wildfowl Trust in the United Kingdom. Since then 899 birds raised in captivity (197 from Britain) have been released in Hawaii. However, liberated birds do not appear to be breeding successfully in the wild, and the population is apparently sustained largely by the annual liberation of birds bred in captivity.



(D. V. Merton photo)

The Hawaiian goose or nene.

BOOK REVIEW

"Medicines of the Maori": Christina Macdonald

For those interested in native trees or nature medicines this book will make a very interesting addition to the bookshelf. Sixty or so native trees and plants are dealt with, and all are illustrated with pen sketches of merit by Lorna McCartney. Native names are used throughout, but botanical names are also given. Tree and plant descriptions are good. A short historical section describes the Maoris' way of life in pre-European times.

The discussion on the medicinal use of plants is very interesting, but it should be read as of historical interest only, except under competent medical advice. Indeed, it is to be hoped readers will not experiment with the cures and other uses described, because these at times result in the destruction of or damage to the plants concerned.

Collins. \$3.95.

A Tribute to a Great Man—Norman Potts

By G. W. Ormandy

ALMOST 4 years ago New Zealand lost a dedicated botanist in Mr Norman Potts, of Opotiki, who died at the age of 84 years. He had been a life member and vice-president of the Society and was acknowledged widely for his service in the propagation of native plants. This tribute to his memory is written by an admirer of his who regarded Mr Potts as his mentor in New Zealand botany and mountain climbing.

THE first occasion that I went climbing with my friend Norman Potts was up the Waioeka Gorge. We dipped our bags in water and then squelched across a shallow swampy area to the base of the heavily bush-covered mountain. As we were crossing this flat piece of ground I was rolling a cigarette.

"What are you going to do with that?"

"Smoke it, of course!"

"Don't you realise that climbing this mountain will put a strain on your heart? You are going to put an extra strain on it by smoking. When climbing a mountain I never smoke. At the top when we have the brew-up I have my first cigarette and then I smoke coming down the mountain, but climbing—never!"

To me this was a salutary lesson which I have observed for the last 45 years. When doing heavy manual work I do not smoke now.

Gathering Specimens

From Norman's teachings I learnt to gather plant specimens when climbing a mountain, for when descending one was generally too tired to do the job properly. He had a tomahawk and a spade with the handles painted white so that they could be easily found in the undergrowth.

Once when we tackled a tangled bush slope Norman went ahead blazing the trail. Then I took over with the tomahawk.

"Why do you do that?"

"Do what?"

"Well, you don't need to destroy. Don't slash the saplings off. Just put a couple of marks on the trunk of a tree or turn down the leaves of a rank-growing young tree."

One Saturday afternoon we went out for a few hours. Norman had his fox-terrier, Bill, with him. As we struggled up a forested slope



Mr Potts planting in the Hukutaia Domain.

we heard Bill barking ahead. On reaching the pig track at the top, we came on the dog, which had an old-man kiwi baled up. The bird had its rump fairly well chewed, but was still on guard facing the yelping dog.

"Well, Norman, we'd better knock the bird on the head. It should make good eating."

"No, we won't. We will call Bill off and leave nature to heal the bird."

This we did, and the bird waddled off into the bush.

Norman Potts hated nonsense and humbug. He had a deep affection for all living things

whether they were human beings, animals, birds, or plants. Many times he quoted Alfred Lord Tennyson: "Kind hearts are more than coronets." On another occasion: "If Hitler had been a gardener, rather than a house painter, he would have been less inclined to destroy life."

Whenever Bishop Bennett came over from the East Coast to Opotiki on his parochial visits, he always spent the first evening with Mr Potts. For several hours these two men discussed Maori life, customs, language, and artefacts, for in these things both men were extremely knowledgeable.

Many thousands of people visited Mr Potts at his home in Opotiki, where he had a fine native coppice and rock garden with a massive 20-ft kauri the sentinel at the entrance. He was forever dispatching plant specimens to interested parties all over the country. While I was in North Africa he got me to send him seeds of the hated camel-thorn, a great source of annoyance to troops not wearing their anklets.

In bringing plants home from the bush he made sure that the roots and foliage were not exposed to sun or wind. Foliage should not be allowed to hang out of the boot of the car. His car was merely his means of transport; so leafy specimens were accorded pride of place on the back seat of the car, as his vehicle had no closed boot.

Chairman of Domain Board

In 1926 the 11 acres of the Hukutaia Domain, some 7 miles from Opotiki, became a recreation reserve. Seven years later Mr Norman Potts was elected chairman of this domain board. He went on plant expeditions all over New Zealand from the Three Kings in the north to Stewart Island in the south. Because of his knowledge of botany and his dedication this domain today has the finest collection of indigenous flora in the country. Meticulously he labelled with his white-painted pegs all the new shrubs and trees he added to Hukutaia. By 1970 he had added 7,000 specimens, the pegs showing the botanical name, source of origin, and Maori and settler's name if any.

The huge king fern, *Marattia salicina*, is abundant today in this domain. In helping in the digging up of small specimens of this fern I had to swear to my friend never to divulge their natural habitat. Here in this unique park,



The entrance to Hukutaia Domain, showing the memorial seat-gate combination in Hinuera stone dedicated to Norman Potts by his many friends.

tenderly cared for over the years by this remarkable man, are to be seen some most unusual plants. The creamy white-trumpeted *Tecomanthe speciosa* is the sole surviving plant of this species from the Three Kings; the native broom, *Carmichaelia arenaria*, is now extinct in its natural habitat at Punakaiki; *Pittosporum obcordatum* is also now extinct in its native home at Kaitaia. In this park plants from the mountains, the lowlands, the coast, and the swamps abound. Here the large-leaved subtropical whau, from Auckland, and the delicate alpine daisy *Celmisia coriacea*, from Arthur's Pass, compete for the visitor's attention.

Awarded Loder Cup

In 1944 Norman Potts was awarded the Loder Cup for his work in the protection and cultivation of native plants.

Mr Potts was pre-deceased by his older son, Peter, who was shot down when flying with the R.A.F. in the Second World War.

On 16 November 1970 Mr Norman Potts died at the age of 84 years. He is survived by his wife, Myra, and his younger son and two daughters.

Hukutaia Domain, which contains the finest and most complete collection of native plants in the whole of New Zealand, is the memorial to this truly great man.

The Disaster of Introducing Animal Pests to New Zealand

By Maire

BEFORE the arrival of man in New Zealand there were no herbivorous or carnivorous mammals here. (A mammal is an animal the female of which suckles its young. Herbivorous means vegetable eating or feeding on vegetation. A carnivorous animal is one which feeds on flesh.)

THE Maori brought the first of each kind—the Maori dog or kuri and the Maori rat, kiore, a largely herbivorous animal. Kuri, the dog, was not in large numbers and was probably valued for hunting birds; indeed, though it was esteemed as an article of food, it is recorded that it was used for food only when it died of old age! Kiore may have come as a stowaway; he multiplied quickly and was also valued as a tasty addition to the menu.

Unique Flora Evolved

Some birds, such as the moa and pigeon, ate quantities of vegetable matter, but because there were no large browsing or predatory

*Sponsored by the J. R. McKenzie Trust.

mammals, a unique flora evolved in New Zealand with unique birds, such as the kiwi, moa, weka, and kakapo, all of which were flightless. Because all their food could be obtained without flying and there were no enemies to fly away from, they gradually lost the power of flight.

When the first Europeans arrived here, New Zealand was therefore a wonderland of beautiful forests and plants, with most unusual and astonishing birds, imposing mountains, fine lakes and rivers, and remarkably beautiful sea coasts.

Unfortunately, early settlers were too intent on establishing homes and farms to give much thought to the beauties and wonders of their



A mountain range laid bare through widespread damage by goats.

new country. They felled and burnt huge areas of bush, some quite needlessly, and killed many birds. They needed the animals they were accustomed to; indeed Captain Cook brought and released in our bush pigs and goats to run wild.

Releasing goats to run wild in this lovely country was a dreadful mistake. The people of the Mediterranean have learnt how destructive goats can be; in some islands it has become obvious that either the goats or man must go.

Farmers needed sheep, horses, and cattle. These were brought out and, of course, have been the source of most of New Zealand's overseas income, but, unfortunately, importations of live animals did not stop there.

Release of Rabbits

Before 1840 rabbits had been imported and released, probably by those who wanted them for sport or who liked rabbit pie, but rabbits soon became a terrible menace, in many places increasing so rapidly that the earth was stripped bare. Indeed, in some areas there were hundreds of thousands of rabbits. I have known a few odd rabbits left alone increase to many thousands in 3 or 4 years. So great was the damage being done that a Rabbit Destruction Council had to be formed, and rabbit destruction boards were set up all over the country.



When the trees are killed by animals' eating them, their roots no longer hold the soil and whole ridges slide away in erosion.



Damage by deer and goats to bush on lower levels in a North Island coastal area. The tree trunks have been stripped bare and gully erosion is starting to wash the topsoil away.

Sadly, however, this was not the worst of the effect of introducing rabbits into New Zealand. Here there were no natural predators (enemies) to keep their numbers down, so bloodthirsty weasels, ferrets, and stoats were imported and set free. Cats were also released in the wild. This was a calamity for our native birds, especially the flightless ones. Doubtless the ferrets did kill many rabbits, but they probably liked our unique birds much more; so did the cats.

Very early after the white man came, European rats—the black rat, a bad menace to native birds, and the brown rat—found their way ashore from ships and they quickly spread all over the country. Mice also found their way here.

These were bad enough, but enthusiasts whose vision was too limited to allow them to see the dreadful menace their desires could inflict on this lovely land urged the importation of many other browsing animals for sport purposes.

Between 1850 and 1900 many groups of different species of deer were imported and

(Continued on page 35)

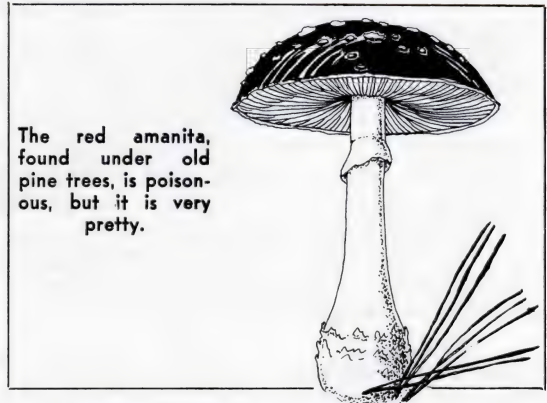
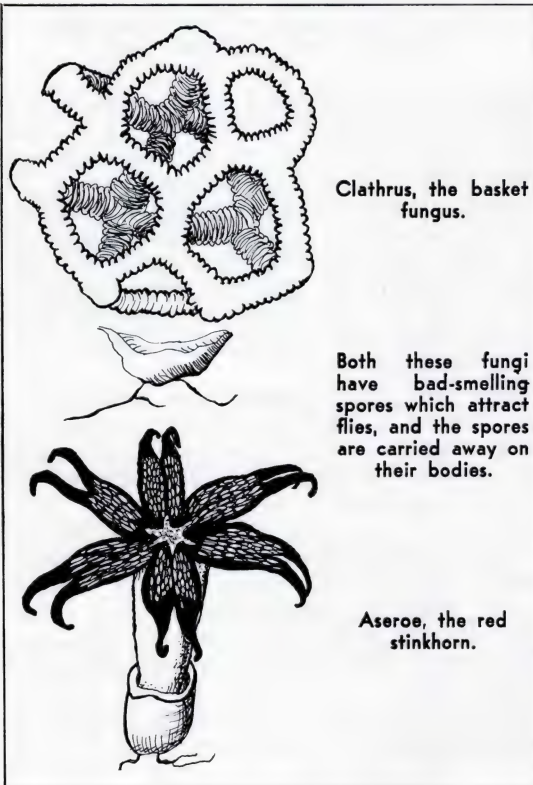
Fungi Are Unusual Plants

A FUNGUS is a very unusual kind of plant with none of the green stuff called chlorophyll, which enables all the usual green plants to live by building up their main body substance from the carbon dioxide of the air. So all the fungi have to get their food second-hand by digesting the remains of other plants or animals, or even by attacking living plants and animals, feeding from them as parasites and thus causing diseases and blights.

The fungi that live on dead things are a help to us, because they rot down all the dead leaves, twigs, and other plant remains and gradually turn them into the humus which restores the soil; they therefore make the soil better for the growth of new crops.

Strange Shape

The shape of a fungus plant is strange, a tangle of threads so fine and small that usually you cannot see them inside soil or rotten wood, but if they collect on the surface, they show up as a cottony web called a growth or mould.



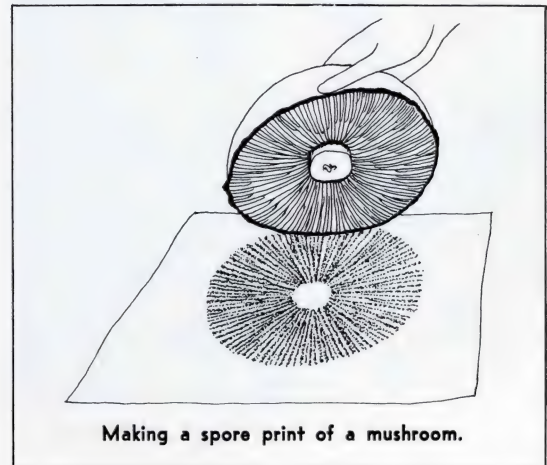
The threads spread digestive juices over the material on which they grow, softening and liquefying it for the web to soak up. This is how fungi grow.

Parasitic fungi, which grow through living cells, absorb ready-made food from the plants or animals they are attacking and which somewhat strangely are called their hosts! Have you seen poplar trees attacked by the rust fungus?

Fungi do not make seeds as garden plants do, but instead make millions of tiny simple spores which float round in the air. Sometimes spores can be seen as a puff of living dust blowing off the surface of a mould or out of a puff-ball.

Making a Print

If you lay a mushroom or a toadstool on a sheet of paper covered by a dish, a print of



millions of microscopic spores will appear overnight. To make the print show up clearly, a toadstool with white gills should be laid on dark paper and one with coloured gills on white paper.

The real fungus plant is all the unseen microscopic threads in the soil, but the "fruits" from which the spores spread are the mushrooms,

toadstools, etc., that spring up after rain, especially in autumn and winter.

How many different colours of fungi can you find in your garden? Often there are little pixie caps in the lawn. Do you go for walks in the bush? There you'll find lots of toadstools with beautiful colours.

—G.B.S.

Animal Pests (continued from page 33)

released under protection of the law. It was not realised that in their home countries deer are kept in control by predators—lions, wolves, and other carnivorous animals—and that in the Northern Hemisphere large numbers of deer perish in winter, because the ground is snow covered, and as most trees lose their leaves in winter, the animals die of starvation.

In New Zealand the vegetation is evergreen, the animals go on feeding right through winter, and there are no enemies to prey on them and keep their numbers down; therefore their numbers increased until hundreds of thousands were in the bush, chewing out the undergrowth and causing shocking erosion.

By 1892 this damage was apparent to observant people, but about this time the Government decided to import two more animals likely to do great damage in country which needed all the protection possible. Within a few years herds of thar and chamois were brought in and released in the South Island. The thar is a form of goat which inhabits very high country, even up to 14,000 ft. Chamois are antelope-like animals also inhabiting country between 4,000 and 8,000 ft. Both animals, imported solely for sport, now do great damage in the Southern Alps.

Menace of Opossum

To complete the disaster to our flora and native fauna, acclimatisation societies, private individuals, and the Tourist Department imported large numbers of opossums from Australia between 1860 and 1920, and these have now increased to many millions, doing great damage to native plants, to orchards, and now even to pasture lands.

The opossum does not cause much harm in its native land, Australia, as its diet is restricted and it does not increase to any extent, but in its new country it has become almost omnivorous (eating all kinds of food), and its increase has been almost unbelievable. Opossums climb trees and chew out the tender

shoots, which kills many trees, and deer and goats by chewing out the undergrowth and making tracks for the opossums to find easy access thus form a partnership disastrous to native bush and bird.

Other animals have been imported by misguided enthusiasts, mainly for sport; hares, for instance, which now extensively damage plantations. Wallabies were liberated and became a nuisance in the Waimate district. Hedgehogs were brought in, and some which escaped increased greatly and are now very harmful to ground-nesting birds.

Fortunately, not all the animals imported survived. These included kangaroos, bandicoots, marsupial cats, racoons, grey chipmunks, brown squirrels, and even llamas and zebras!

Extremely Dangerous

I have written about these imported animals for a purpose. I agree that deer, thar, chamois, and opossums are all, in their own way, lovely and interesting animals, but they are extremely dangerous ones here and should never have been brought in.

We cannot afford to let them continue to destroy New Zealand's flora and with it the native birds which depend on it; we cannot afford to let them go on stripping the vegetation off our steep mountain slopes and setting up serious erosion. We have a duty to mankind to preserve the fauna and flora of New Zealand. For our own sakes we must prevent the devastating loss of soil by flooding and the associated loss of water control which these animals browsing in our forests and on steep hills are causing. Keeping our soil and control of our water supplies are vital to our welfare.

When you read that we want to get rid of deer, opossums, thar, chamois, and other pests by all humane means possible, please remember this is not because we don't like these animals; it is because we know that New Zealand cannot afford to allow them to continue their enormous destruction in this lovely land.

ROYAL FOREST AND BIRD PROTECTION SOCIETY OF NEW ZEALAND INC.

(FOUNDED 28 MARCH 1923)

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New Zealand, Sir Denis Blundell,
G.C.M.G., G.C.V.O., K.B.E.

Her Excellency Lady Blundell

Representative of the Maori Race,
The Right Rev. the Bishop of Aotearoa.

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MOTUEKA: Denis Brereton, Baton, Motueka.

HEAD OFFICE

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Phone 43239, 42954.

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SOCIETY'S LODGES AND HOUSES

Tautuku Lodge

Situated 45 miles from Balclutha on State Highway 92, Tautuku Lodge on the Society's 1,360-acre bush-clad Lenz Reserve in coastal south-east Otago is the place for that weekend or holiday in beautiful, peaceful, unspoiled surroundings.

The reserve has interesting bush walks, and native birds are numerous. The round track is a comfortable 4 hours' walk, and as this is in its formative state, visitors are requested to keep to the marked track route.

The lodge is fully equipped and accommodates eight or nine people. It has a lounge, kitchen, two bunkrooms with innerspring mattresses and foam rubber pillows, washroom with tub, basin, and shower, and an ablution block with toilets, basins, and showers. Charges are moderate, as shown below.

The cooking facilities in the modern kitchen are excellent.

Bring with you all food supplies, bed linen, and pillow cases, blankets, towels, tea towels, etc.

Bookings are accepted up to 9 months in advance. No refunds are made unless cancellation is advised at least 1 month before reserved occupancy.

Rates per night are:

Members—adults, \$2; juniors, \$1.

Non-members—adults, \$3; juniors, \$1.50.

A deposit of 50 percent is to be made with each booking.

For free brochure and all bookings apply to Mrs F. B. Bennett, Papatowai, R. D. Owaka. Telephone 160M.

Turner Cottage

The Turner Cottage, on Stewart Island, is available for renting. The cottage, a one-roomed dwelling furnished for three people, can be obtained at a rental of \$2.50 a day.

For details write, enclosing a stamped addressed envelope, to:

The secretary, Southland Section, P.O. Box 1155, Invercargill.

Bushy Park, Kai Iwi

(15 miles north of Wanganui)

Fine old homestead, lovely grounds, 220 acres of native bush.

Make your own programme. Electric stove, hot water, and other facilities available. Bring your own rations and bedding.

Fees: Members, \$2.50 per night; non-members, \$3.50 per night; children under 15, half rates.

Custodian: C/o Bushy Park homestead, post office, Kai Iwi, via Wanganui. Telephone 49-734 Wanganui.

The park is closed to daytime visitors on Mondays and Tuesdays.

Ruapehu Lodge

Ruapehu Lodge is available to members and guests for occupation. To avoid double booking all bookings must be made with the Society's head office, P.O. Box 631, Wellington.

Fees: Winter season (1 June to 31 October), \$2.50 per night for all persons of all ages.

Summer season (1 November to 31 May), adult members, \$2; junior members, \$1; non-member guests, all ages, \$2.50.

Bookings: Bookings may be made by members, sections, and branches 9 months in advance.

A deposit of 20 percent (50c per person per night) is payable on application and the remainder within 6 weeks of the date of the trip.

If bookings are not confirmed by the due date, the space may be relet.

Refunds are subject to \$10 surcharge.

The deposit receipt will be returned with an instructions sheet listing suggested equipment which should be taken on the trip: Tea-towel, torch, sleeping bag, blankets, sheets, and slippers or light shoes. A pillow case is essential.

The wearing of boots inside the lodge is not permitted. No animals or pets are allowed in the park.

Any person occupying the lodge without prior booking must immediately remit the proper fees to the booking officer.

Waiheke Cottage, Onetangi

The cottage has comfortable bunk accommodation for eight people and has electric lighting, stove, refrigerator, and hot water. Adjacent to a 121-acre wildlife reserve, it is an easy walk to shops and the beach. Everything is supplied except linen and food.

No animals permitted.

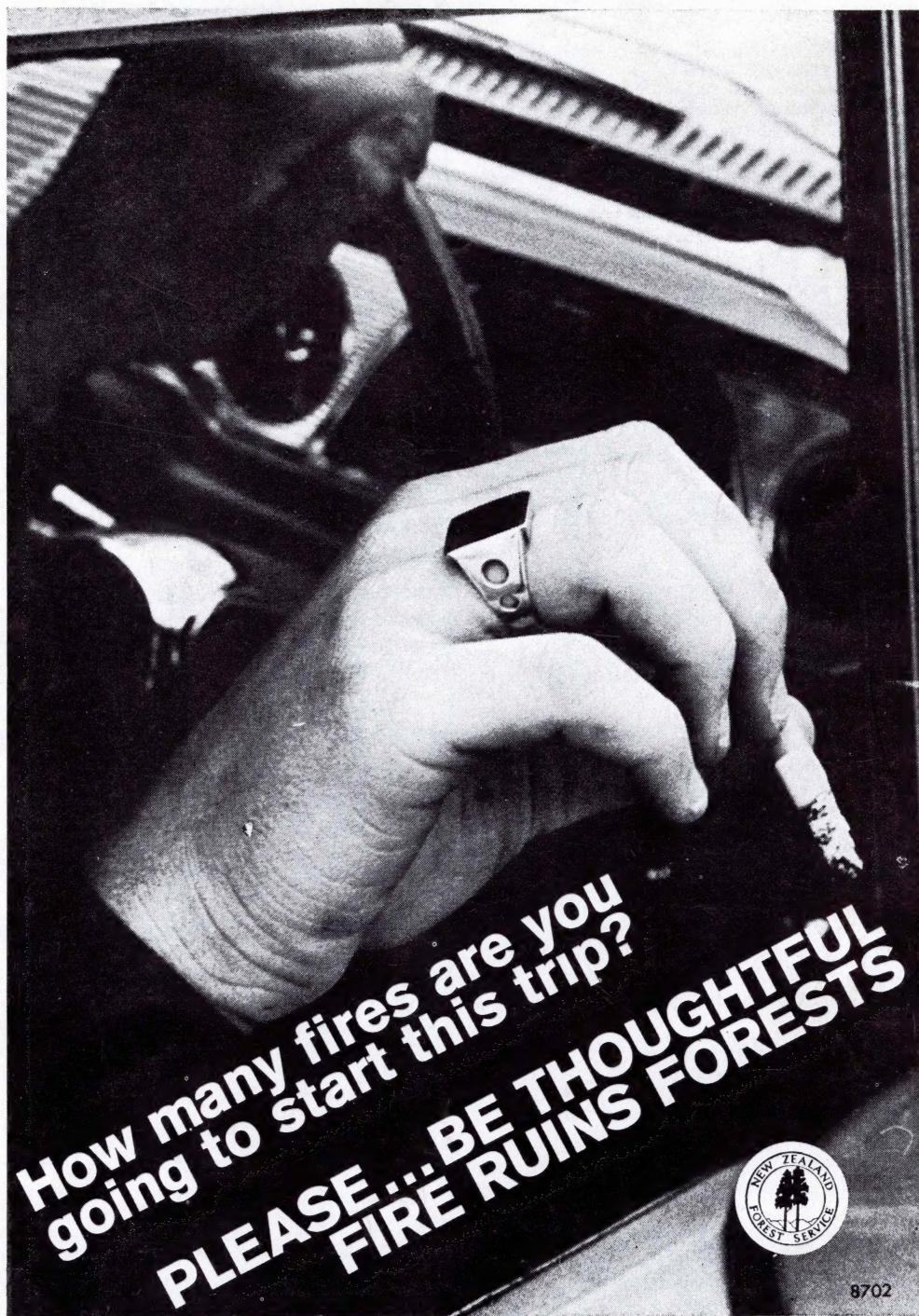
Rental: Summer, \$21 per week.

Winter (after Easter to mid-October), \$15 per week.

Weekends only, \$9.

A deposit of 50 percent is payable on booking, the remainder before entry.

Booking Officer: Mr C. Howarth, 31 Brentford Place, Manurewa, South Auckland. Telephone Manurewa 64-838.



How many fires are you
going to start this trip?
**PLEASE... BE THOUGHTFUL
FIRE RUINS FORESTS**



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